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ABSTRACT

A collection of articles about methaqualone (also known as quaalude or mequin) is presented. Article 1 discusses the increasing popularity of the depressant, methaqualone-produced psychophysiological effects, substitute drugs (valium, phenobarbital, benadryl, and mandrax), overdose and addiction, and decreasing pharmaceutical production. Article 2 reports on China's attempts to tighten export controls over Chinese-manufactured methaqualone. Article 3 reports on a Drug Enforcement Administration alert on counterfeit methaqualone containing high levels of toxic chemicals. Article 4 briefly mentions the increasing production of quaalude and cocaine lookalikes, and article 5 deals with recent physical and chemical changes in the drug. In article 6, changing patterns of methaqualone abuse are detailed, and the final article reports on Florida's ban on the drug. The document concludes with an annotated bibliography of 24 books and articles published between 1971 and 1983. (LH)

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Do It Now Foundation
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Methaqualone
(Quaalude®, Mequin®)

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INFORMAT

MEQUIN a. k. a. QUAALUDE

45

**On American streets today, Mequin—
or Quaalude or whatever you want to
call it—is easily the most desirable of
all downer drugs.**

Mention the word "downer" to some people and one drug, and one drug only, will come to mind: methaqualone. Because since its introduction into the United States in 1965, methaqualone has come to represent the ultimate in downer drugs to many drug users, and from its earliest days, the drug has rated near the top of street drug "most-wanted" charts.

The story is no different today. If anything, demand on the street for methaqualone (currently sold legitimately under the trade names Mequin® and Quaalude®, and on the street as "ludes" or "714s") appears greater today than ever before, and a massive illegal industry has risen up to meet it.

According to the U.S. Drug Enforcement Administration, street sales of the drug in 1982 totaled \$2 billion, and illegal imports of methaqualone tablets and powder amounted to at least a quarter of a million pounds.

Figure in the fact that, for 1981, methaqualone was the fifth most mentioned drug in hospital emergency room visits throughout the United States, involved in nearly 5,000 separate emergencies, and you begin to get an idea of exactly how serious the problem with methaqualone still happens to be.

And then figure in the further complication that due to high levels of demand, much of what's being passed off on the street for methaqualone isn't methaqualone at all (and in some



Incarnations of Methaqualone

cases, is even more hazardous than methaqualone) and you begin to realize just how serious the problem is likely to remain.

All in all, the situation looks pretty bleak, particularly when you compare the reality of methaqualone to the way things were supposed to be, or least the way the drug companies that promoted methaqualone said they were going to be.

Useful Fictions

First synthesized in India in 1955, methaqualone was initially hailed throughout the world as the long-awaited, addiction-free successor to barbiturates, the dangerous and addictive depressant drugs then in common use as sleeping pills and daytime sedatives.

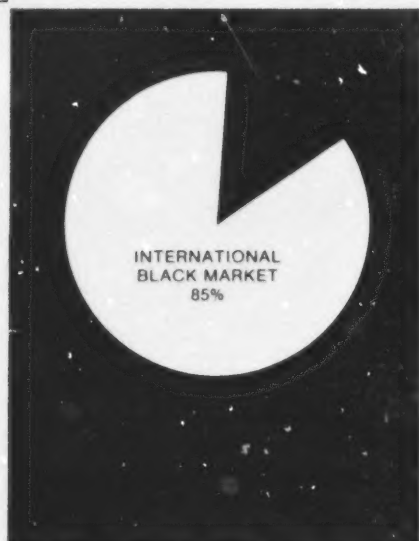
Falling into a broad new category of drugs known as non-barbiturate sedative-hypnotics—a unique hodgepodge of psychochemicals whose medical classification is based as much on what the drugs are not as what they are—methaqualone was loudly proclaimed by its manufacturers as a safe, side-effect-free example of modern pharmacology come to everyone's rescue.

But things didn't quite turn out that way.

Because by the early 1970's, people began to learn—the hard way—that the drug companies' optimism was mostly misplaced.

Quaalude, and other brands of methaqualone then in circulation (including Sopor®, Somnafac®, Optimil®, Parest®, and others), were gradually linked to a snarl of health- and dependence-related problems, not the least of which were addiction and a potentially life-threatening overdose syndrome.

By Jim Parker



But that didn't stop people from wanting the drug. And in spite of the fact that, one by one, the legitimate manufacturers of methaqualone abandoned the drug (largely due to its serious abuse potential), and regardless of the fact that the last remaining U.S. producer, the Rorer Company, sold all rights and patents to its version of the drug, Quaalude, to Lemmon Pharmaceuticals, and notwithstanding Lemmon's decision to change the name of the drug from Quaalude to Mequin® (due to the reluctance of many physicians to prescribe a drug as notorious as Quaalude), want it they continue to do. And to understand that *want*, you first have to understand the soft, seductive, sedative effects of the drug called methaqualone.

Actions & Interactions

So what are those effects like?

Well, in general, they're similar to alcohol and other depressant drugs. Since methaqualone combines both *sedative* and *hypnotic* properties (sedative means it sedates and tranquilizes users; hypnotic means it produces sleep), methaqualone produces a range of objective and subjective effects, all of them leading in one direction: down.

Newservice July/August 1983

Objectively, the drug produces general depression of the central nervous system. It reduces heart rate, pulse, respiration, and muscular coordination, with the onset of effects usually occurring within 10-20 minutes of ingestion and lasting 6-10 hours. Subjectively, methaqualone produces feelings of relaxation, confidence, and euphoria. These effects can easily serve to lessen a person's ordinary inhibitions, which is one reason the drug has garnered a reputation as an aphrodisiac over the years. However, like many another "aphrodisiac," including alcohol, all amorous properties of methaqualone are purely the product of decreased inhibition, rather than increased performance. And also like alcohol, the long-term depressant effects of methaqualone tend to quickly cancel out any short-term decreases in inhibition. In other words (and older words; these were written by Shakespeare centuries ago), methaqualone, like alcohol, "provokes the desire, but it takes away the performance."

Other methaqualone-produced effects are more serious. For one thing, the drug produces a high level of tolerance, which means that users have to take more and more over time to produce the same effects. This property represents one of the drug's more subtle dangers because, while tolerance increases rapidly, lethal dosage level increases slowly, so that the gap between an intoxicating dose and an overdose can dwindle to nearly nothing. One result that happens far too often for too many users is overdose, or methaqualone poisoning, which can be fatal.

The danger of overdose is also compounded when methaqualone is taken with alcohol, since methaqualone is metabolized through the same liver enzyme system as alcohol. When both drugs are present, alcohol is processed first (since it's a simpler molecule) and the methaqualone is placed on a sort of "standby" status, where it can be secreted with bile into the intestines and reabsorbed. Methaqualone reabsorbed in this way can continue to produce effects long after a person would have ordinarily come down. If additional methaqualone is taken later or during the next day,

effects can be greatly exaggerated, and overdose result.

Switches & Substitutions

One of the more serious risks involved with the methaqualone currently in circulation on the street is the substitution of other drugs. Due to the popularity of methaqualone, demand has long outstripped supply in the United States. This has been particularly true in recent years since federal authorities slapped tight production quotas on legitimate manufacture of the drug. As a result, South American-based manufacturers stepped in to meet the demand with illegally-produced Quaalude tablets pressed from methaqualone powder diverted from legitimate European and Asian sources.

But as a result of recent international efforts to stop diversion of legally-produced methaqualone onto the black market, foreign producer countries have begun to curtail or reduce export of methaqualone powder to distributors of questionable legality in Central and South America, who have responded in turn by substituting other, less-scarce depressant drugs for methaqualone in their counterfeit tablets. And substitution isn't just an occasional thing. According to analysis data compiled from street drug analysis programs in 1982, the validity rate for the drug—that is the percentage of street methaqualone samples that actually prove to contain the drug—is only 52 percent.

Probably the most common substitute drugs currently found in street 'ludes are Valium and phenobarbital, and both pose significant risks to users. Valium has been detected in counterfeit Quaaludes at extremely high dosage levels (as much as 150 mg, according to one street drug analysis lab, or roughly 15-30 times a normal dose), and this factor alone further complicates the Quaalude overdose picture.

With phenobarbital, the dangers are different, but no less real. Phenobarbital, a common, slow-acting barbiturate, typically exerts its

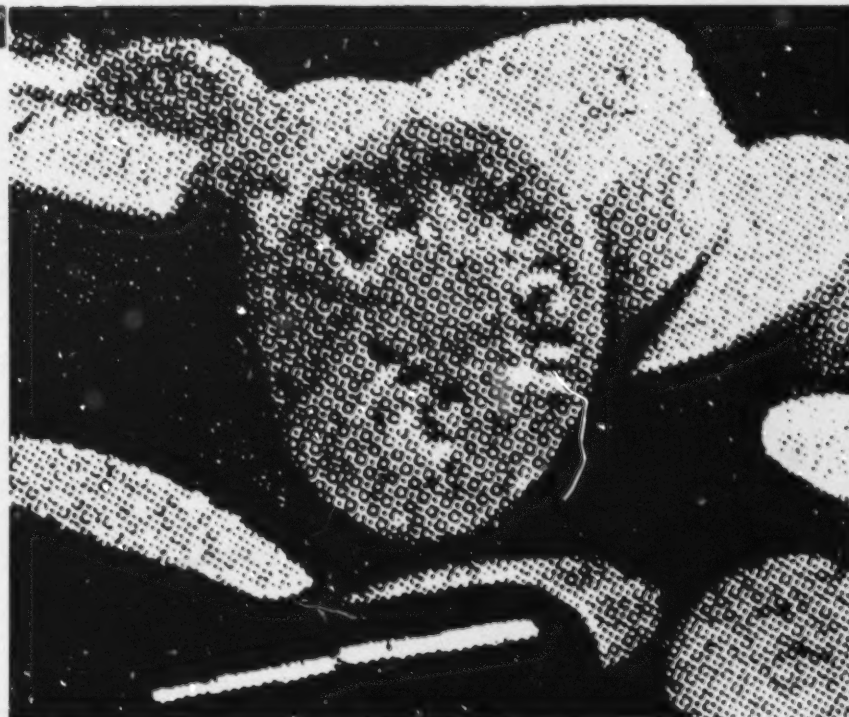
depressant effects over a much longer period of time than does methaqualone. In addition, phenobarbital's effects are generally milder than methaqualone. In combination, these two factors mean that a user who is used to the quick onset of Quaalude could easily take extra phenobarb "Quaaludes" while waiting for the drug effects to come on. The outcome could be an overdose. Failing that, phenobarb continues to produce depressant effects for several days after use, which can have its disadvantages, even to a die-hard downer user, and particularly if he has to drive or perform work that requires any degree of concentration.

Other frequent substitute ingredients found in bootleg and "lookalike" Quaaludes include a range of over-the-counter drugs and controlled substances, including diphenhydramine, a sedating antihistamine more commonly known as Benadryl® and a legitimate ingredient in the European-Canadian methaqualone preparation known as Mandrax®. Other common methaqualone stand-ins include antihistamines such as pheniramine, doxylamine, and hydroxyzine; pain relievers such as acetaminophen and aspirin; and a grab-bag of such miscellaneous pharmacological flotsam as ephedrine (a common, non-prescription heart stimulant), secobarbital (a fast-acting barbiturate), and the surgical anesthetic ketamine.

Overdose & Addiction

Due to methaqualone's extreme addictiveness and its demonstrated dangers in overdose, situations in which either is a factor should be handled very carefully.

Because of methaqualone's ability to depress key body functions and its high substitution rate, probably the best course of action to follow in the event of a methaqualone-suspected overdose is to get help *fast*. Legitimate methaqualone produces a very serious overdose syndrome which can include such life-threatening symptoms as irregular and shallow breathing, convulsions, and coma. Of particular concern in a crisis is the



drug's ability to trigger spontaneous vomiting, which can lead to death from suffocation through the inhalation of vomit fluids. For this reason, it's best to keep the victim awake and moving, if at all possible. And if there's any doubt about the safety of the number of tablets that the person may have taken, or if the heart rate or breathing is particularly slow (say, below 50 beats or eight breaths a minute), keep them awake and moving *in the direction of a hospital*. And remember a piece of old advice that's as true as ever today: It's better to be safe than sorry.

Methaqualone's early advocates to the contrary, the drug is addictive, highly so. Withdrawal is a difficult, painful process indeed, and complications are so troublesome that withdrawal following long-term use should be attempted only under medical supervision. The risk of convulsions, in particular, is pronounced. To reduce this danger, addicts are often "weened" from methaqualone through substitution of a longer-acting depressant like phenobarbital, which is then gradually tapered off. Either way, it's no picnic.

Anything Goes

So where does all this leave us? Right back where we started, unfortunately.

Because for all its faults, methaqualone is still a much-sought-after downer on the street—the downer, to a lot of people. A single tablet can cost as much as \$5-8, and a thriving cottage industry of legal, Quaalude-dispensing "stress clinics" have popped up across the country, staffed by physicians who don't mind playing fast and loose with the lives of their patients for a little fast money.

From all appearances, demand for Quaalude—or Mequin, whatever you want to call it—isn't going to go away. And even though individual states have banned legitimate sale of methaqualone (Florida and Georgia did in 1982), and others will probably consider similar legislation, demand where it counts most—on the street—shows little sign of abating. And Quaalude has always been illegal on the street.

Given what looks to be increasingly-scarce pharmaceutical supplies of the drug and continuing high demand for those increasingly-scarce supplies (and for increasingly-counterfeit supplies produced in South America and elsewhere), the methaqualone street scene should continue to hold at least a few more surprises for years to come.

Because on the street, anything can happen. And it usually does.

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Chinese to Cut International Quaalude Connection

PEKING—Pledging increased cooperation in curbing international trafficking of the drug, an official of the People's Republic of China has vowed to seek tightened export controls over Chinese-manufactured methaqualone.

Zhu Quizhen, director of American Affairs in the Chinese foreign ministry, met with U.S. Sen. Paula Hawkins (R-Fla.) to discuss Chinese initiatives to increase trade restrictions on the non-barbiturate sedative-hypnotic, marketed in the U.S. as Quaalude® or Mequin®.

According to hearings last May before the Senate Subcommittee on Investigations and Oversight, which Hawkins chairs, over 90 percent of all methaqualone seized in America is produced and exported by China.

Acknowledging that China sells large quantities of the drug for medical and scientific use, Zhu told Hawkins that government officials were unaware that Chinese methaqualone was diverted in

sizable quantities to illicit foreign drug markets.

"We were unaware that international drug traffickers would take advantage of this situation and did not know that 90 percent of the methaqualone seizures were of Chinese origin," Zhu said, adding that China had promptly instituted methaqualone trade controls following notification by U.S. officials of the booming black market for the drug. "China has adopted effective measures to tighten export controls of methaqualone, and is proceeding to develop international cooperation in this area," he said, noting that discussion would soon be underway with the International Narcotics Control Board.

Hawkins, who met with Zhu in the Chinese capital following four-day agricultural trade discussions in South Korea, described the conference tone as "positive" with long-range implications for U.S.

relations with the People's Republic.

"(This) attitude of cooperation could go a long way toward improving U.S.-Chinese relations," Hawkins said in a prepared statement on her return. "I think the Chinese government is quite serious when it says it will take steps necessary to control illicit drug traffic."

Recalling her conversation with Zhu, Hawkins said she was particularly impressed by his reference to British opium trade in China during the mid-nineteenth century as a key motive behind the present government's concern. According to Zhu, "China was kept in bondage for many years by foreign powers who exploited the drug traffic to keep the Chinese people submissive," Hawkins said, adding that the Chinese minister told her the people of China "have never forgotten that."

Reprinted from *Drug Survival News*, 10(6), June 1982.

DEA: Toxic Quaaludes Seized in Florida

MIAMI—Illegally manufactured Quaalude tablets containing high concentrations of a commercial glue resin may produce a toxic liver reaction in humans, according to a recent Drug Enforcement Administration alert.

The Southeast Regional DEA Office in Miami issued the warning following a spring seizure of 3,695 counterfeit methaqualone, or Quaalude, tablets found to contain high levels of an epoxy glue hardener used commercially to seal boats. The chemical is believed to have been added as a hardening agent.

A study reported in the September 8, 1974 *New England Journal of*

Medicine, found that over-exposure to the chemical, P,P-diaminodiphenylmethane (P,P-DDM), produces "toxic hepatitis," a form of liver damage similar to that produced by viral hepatitis. Characterized by transient bouts of severe intestinal pain, repeated exposure results in permanent scarring of liver tissue.

Analysis of the tablets in DEA labs revealed 1.5 mg of methaqualone, a non-barbiturate sedative hypnotic, blended with 149 mg of P,P-DDM per tablet. The samples were also found to contain diazepam (Valium), a widely prescribed tranquilizer.

According to the alert, a toxic dose of P,P-DDM is 8.4 milligrams per kilogram of body weight. The DEA estimated that 4 of the counterfeit tablets would "well exceed the dose" necessary to produce toxic hepatitis in a 120 lb. person.

Jo Warren of Street Pharmacologist, a Miami-based street drug analysis service, noted that the center's lab had not received any samples of bootleg Quaalude found to contain P,P-DDM. "None of these ludes turned up in any of our lab samples," Warren told *DSN*. "That information came from a DEA alert. DEA says they got all the Quaaludes before they hit the street."

The Changing Face of Methaqualone

During the past few years the prescription drug Quaalude® has experienced a face change. The large, round, white tablet went from sporting a Rorer 714 to bearing the trademark Lemmon 714. And now a new name comes along with the third new look: Mequin® tablets (still large, round and white) will be stamped with LMN 300. Both Quaaludes and Mequin are currently being marketed by the Lemmon Company.

What does all this have to do with street drugs? Well all these changes are keeping the manufacturers of street methaqualones on their toes to be certain that they have the right "look" to display on their products. But the look of street "ludes" isn't the only thing that's changing. The ingredients of these products have also changed substantially.

Over the last two years analysis reports have shown many samples that were reported as being methaqualone have actually contained

diazepam (Valium®), often in large doses. Of the samples reported on the **Analysis** chart as containing diazepam, some were described as being marked with Lemmon 714, others with LMN 300.

Other, more unexpected, ingredients include a Lemmon 714 from Florida that contained a large amount of ephedrine, a decongestant. A cream colored tablet sold as methaqualone actually contained Vitamin C. Testing found that three samples contained acetaminophen, salicylamide (an analgesic similar to aspirin) and some unidentified substance. Other samples have contained antihistamines such as doxylamine and chlorpheniramine, either alone or with varying amounts of methaqualone. One of the more interesting examples of this was a sample, also from Florida, containing doxylamine that was a round, white tablet marked with *Lennon* 714. This sample also contained unidentified substances.

Street Drugs Analysis All U.S.	Actual Contents (main ingredients)																										Purported Contents	Totals	
Feb — May 1981	Amphetamine	Methamphetamine	Caffeine	Ephedrine	Caff. & Ephedrine	Pseudoephedrine	PPA, Caffeine Ephedrine Combs	Diet Pills	Asthma Meds & Antihistamines	Barbiturate	Methaqualone	Misc. Tranquilizers	Diazepam (Valium)	Cocaine	Coke & Lidocaine	" & Mannitol	" & Misc. Pharma	Additives Only	LSD	Positive THC	PCP	Heroin & Adulterants	MDA & MDM	Mescaline	Pilocybin	Corticosteroids & Arthritis Meds	Unidentified	No Drugs	Totals
Amphetamine	1	2	2			6																						1	12
Methamphetamine	1	12	2																										15
Speed-Uppers	1	1	6			24		1																			1	34	
Downers									2																			1	3
Methaqualone			1					2	1	25		8						1										39	
Cocaine	1					1							126	22	50	57	16											273	
Heroin									1																			1	
LSD																			8								2	10	
Barbiturate																													
Marijuana/Hash																				29							3	32	
PCP																					1							1	
Angel Dust/THC																				1	2							3	
MDA & MDM																						4						4	
Mescaline																			1				1				1	3	
Pilocybin																									2		2	4	
Arthritis Meds												1														7		8	
Asthma Meds																													
Diet Pills						2	1																3					3	
XTC or Ecstasy																											2		
Dilaudid																													
Unknown		2	2	6		1	19		8	1	3		6	1		2	8	10		4	1	1	1			17	13	19	125
Totals	4	17	2	17		1	52	1	11	5	28		15	127	22	52	65	27	9	34	4	1	8	1	2	24	16	30	575

Changing Patterns of Methaqualone Abuse

A Survey of 246 Fatalities

Charles V. Wetli, MD

• Of 246 methaqualone-related deaths identified during an 11-year period (1971 through 1981), 76% have occurred since 1977 and 72% have involved fatal trauma. One third of the victims died in vehicular crashes. Sharp increases in methaqualone-related traumatic suicides, nonvehicular accidents, and homicides have occurred since 1978. This report discusses demographic and toxicological findings, particularly in regard to counterfeit methaqualone. The pattern of fatal methaqualone abuse has changed from an overdose phenomenon in the early 1970s to one of traumatic death. Victims frequently have exhibited poor judgment, impulsive behavior, and somnolence while attempting to function in their environment. The socioeconomic impact of recreational methaqualone abuse should be curtailed by appropriate governmental action and restraint in the prescribing of methaqualone.

(JAMA 1983;249:621-626)

POPULAR notions of euphoria and aphrodisiac qualities have made methaqualone hydrochloride a popular recreational drug of abuse for more than a decade.¹ Although death due to overdose or trauma related to the abuse of this drug is not particularly uncommon, we have observed an increased frequency of such deaths in recent years. To gain a better perspective of current abuse trends, methaqualone-related deaths investigated by this office during an 11-year period (1971 through 1981) were reviewed.

From the Dade County Medical Examiner Department and the Department of Pathology, University of Miami School of Medicine, Miami.

Reprint requests to Dade County Medical Examiner Department, 1050 NW 10th St, Miami, FL 33136 (Dr Wetli).

METHODS

The Dade County (Florida) Medical Examiner Office, Miami, is responsible for investigating all deaths that occur suddenly and unexpectedly (while the victim is apparently in good health) and any apparently unnatural death. The geographic jurisdiction encompasses the greater Miami area as well as smaller municipalities and unincorporated areas.

The approach to death investigation has been consistent during the 11-year study period. Circumstances of death, background information, and medical history were routinely obtained from police investigators, forensic (medical examiner) investigators, and, in selected instances, medical examiner scene investigations. Complete autopsies were performed in all cases. Determinations as to cause and manner of death were based on evaluation of the circumstances of death in conjunc-

tion with the autopsy and toxicological findings.² Evidence of intent to die was of paramount importance in differentiating accidental and suicidal drug overdose.

Although toxicological testing cannot be performed in each of the 4,500 deaths investigated by this office each year, such studies are routinely performed in deaths in which drug overdose is suspected (because of circumstances and/or autopsy findings) and deaths involving physical trauma in any form. It is therefore possible that some deaths (particularly natural) would not be investigated for methaqualone involvement. Because of the consistent approach to death investigation, however, the proportion of such cases should be fairly uniform during the duration of the study period.

A methaqualone-related death was defined as any death in which the drug was detected in body fluids or tissues obtained at the time of autopsy. The 246 cases identified from January 1971 through December 1981 were then categorized as accidental or suicidal drug overdose, traumatic accident, traumatic suicide, homicide, or natural death. Specimens routinely obtained at autopsy were submitted for toxicological testing. These included blood, urine, and frequently liver, bile, and ocular fluid. Methaqualone was detected by UV spectrophotometry,^{3,4} with a detectability limit of about 2 mg/L. Since 1978, a gas-liquid chromatographic procedure⁵ has also been utilized, particularly when it was necessary to quantify multiple drugs in a specimen or when another drug would interfere with the UV procedure. The gas-liquid chromatographic procedure can

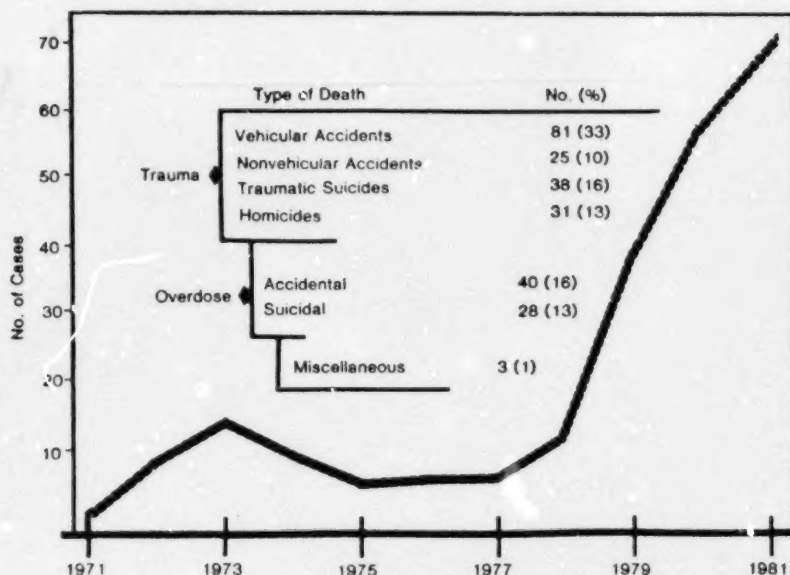


Fig 1.—Total methaqualone-related deaths, 1971 through 1981.

detect methaqualone levels of as little as 0.1 mg/L. Alcohol and other drugs were identified by standard toxicological techniques used in this laboratory.

RESULTS

Two hundred forty-six methaqualone-related deaths were identified from January 1971 through December 1981. A peak incidence of 17 deaths in 1973 was followed by another sharp increase in 1978 and culminated in 70 deaths in 1981 alone (Fig 1). More than three fourths of the methaqualone-related deaths in this series have occurred since 1977. Trauma of one form or another was responsible for 72% of the fatalities, and drug overdose accounted for 27%. Three individuals (about 1%) died of natural disease processes (chronic alcoholism, cardiomyopathy, and epilepsy); the methaqualone detected was considered incidental and not a contributory factor to their deaths (blood concentrations of methaqualone were 1.4 mg/L, trace, and 0.66 mg/L, respectively).

White males composed nearly 70% of the cases; their ages ranged from 13 to 70 years (average, 25 years). White females accounted for 26% of the victims; they had a similar age range (average, 26 years). Although 17% of the population of Dade County is black, less than 5% of the methaqualone-related deaths occurred in this ethnic group. The sex, race, and

age distributions were similar for each of the categories studied except in the suicidal overdose group, which had an average age of 34 years.

Of the 68 overdose deaths, 40 (59%) were accidental and 28 (41%) were suicidal. The yearly incidence was quite similar for both groups, with a peak incidence occurring in 1973 (Fig 2). Although the incidence of overdose deaths has been increasing since 1979, sixty-two percent of these cases occurred before 1978. Toxicological data (Fig 3) demonstrated an average blood methaqualone concentration of 23 mg/L in both accidental and suicidal overdose deaths (about six times the therapeutic level of 4 mg/L¹²). Those dying of accidental overdose, however, had the equivalent of about one tablet remaining unabsorbed in their stomachs, as compared with about nine tablets remaining unabsorbed in the suicide victims. The range of methaqualone detected in both the blood and the stomach was quite wide and probably reflects the frequent association with other drugs. In both groups, alcohol, benzodiazepines, and barbiturates were often detected. Whereas cocaine and narcotics were frequently associated with accidental overdose involving methaqualone, these were relatively infrequent in the suicide victims.

Methaqualone was the only drug identified in five victims of suicidal overdose and was the major drug in

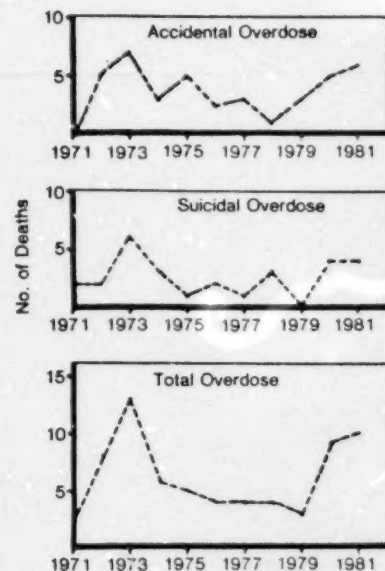


Fig 2.—Methaqualone-related overdose deaths, 1971 through 1981.

three others (ie, other drugs were present, but in low concentrations). Methaqualone was present in low concentrations in three other multi-drug suicidal overdose victims; its role in contributing to these deaths was considered negligible. In the remaining 17 cases, both methaqualone and other drugs were present in high concentrations. In the accidental overdose victims, the role of methaqualone in contributing to the death was less clearly defined. In large part, this was because most had evidence of recreational polydrug abuse, and hence toxicological testing frequently disclosed the presence of multiple drugs. Nevertheless, methaqualone seemed to be the sole or primary agent responsible for death in about half the cases. In about one fourth, the concentration of methaqualone detected was low relative to that of other drugs detected (such as cocaine or opiates) and its role in contributing to the death was probably negligible. In the remainder, methaqualone concentrations were high but were also associated with high concentrations of other drugs. Historical or circumstantial evidence indicated a recreational motive for taking methaqualone in the accidental overdose victims. There was no evidence that any of these victims simply disregarded the directions of prescribed medication, which has been observed with some other drugs.¹⁰

	Accidental Overdose (N=38)	Suicidal Overdose (N=27)
Methaqualone Blood Concentration, mg/L		
Average	23.2	23.0
Range	0.2-92.0	1.8-64.5
Methaqualone in Stomach, mg		
Average	295	2,752
Range	0-2,460	10-5,620
Other Drugs Detected		
None	5	5
Alcohol	8	5
Benzodiazepines	11	8
Barbiturates	8	10
Cocaine	9	1
Opiates	9	3
Methadone	8	1
Other	15	8

Fig 3.—Toxicological data in methaqualone-related overdose deaths.

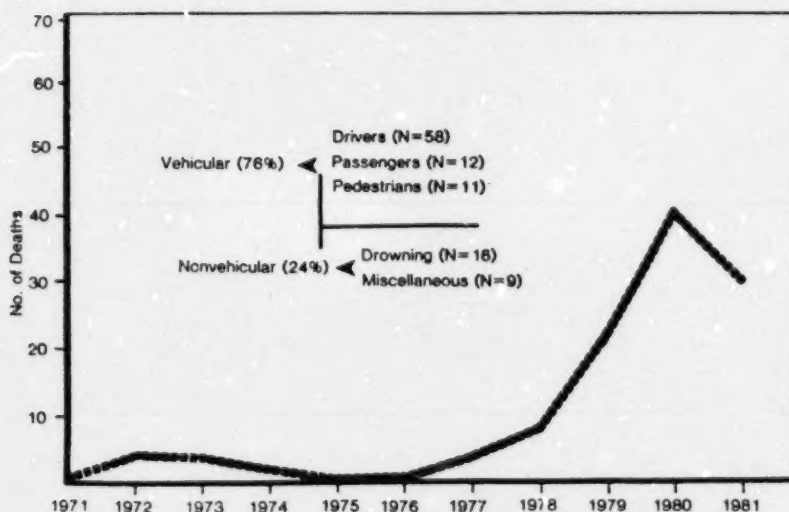


Fig 4.—Methaqualone-related accidental deaths, 1971 through 1981 (N=106).

Traumatic accidents were responsible for 106 deaths (43%) in this series, 93% of them since 1977. Vehicular fatalities accounted for 81 deaths, 58 in motor vehicle drivers (Fig 4). In nine instances, the driver was operating a motorcycle, once a moped was involved, and the remainder involved automobiles. Only four of the drivers were considered to be not at fault. In the remainder, the following precrash factors were cited: 19 exhibited poor judgment, 16 apparently lost con-

scious control at the wheel (ie, the vehicle appeared to be driverless, drifting across the roadway, etc), 13 were cited for excessive speed, and two simply failed to make a decision (eg, failure to turn at a "T" intersection). The motor vehicle drivers averaged 23 years of age (range, 15 to 34 years). Fifteen (26%) were younger than age 20 years, twenty-six (45%) were between 20 and 25 years old, and the remainder were older than 25 years. These motor vehicle drivers

had an average blood methaqualone concentration of 6.5 mg/L (Fig 5), which is slightly above the therapeutic level. Although alcohol was also detected in more than 75%, in nearly half the blood concentration was less than the usual 0.10% statutory limit of presumed alcoholic intoxication (Fig 6). Thus, 76% of drivers in methaqualone-related fatalities had below the usually accepted legal presumption of alcoholic intoxication, yet had precrash factors very similar to those of the usual grossly intoxicated driver. Besides alcohol, benzodiazepines and/or cocaine was detected in about 30%.

Of the 12 motor vehicle passenger fatalities, three died along with the respective motor vehicle operators, who were also under the influence of methaqualone. Of the 11 pedestrians killed, two were considered to be totally not at fault, seven were regarded as being at least partly at fault (eg, walking in the middle of a major road at night), and for the other two there was not enough information to form an opinion as to their own degree of liability. Both passenger and pedestrian fatalities had toxicological findings similar to those in the motor vehicle driver victims (Fig 5). They averaged 21 years of age, and white males preponderated by a 4:1 ratio.

Nonvehicular accidents accounted for 25 deaths. Sixteen persons drowned while swimming, three died after falls, and the remainder died of miscellaneous causes (eg, electrocution, aspiration of food). These victims averaged 22 years of age and had toxicological findings similar to those of the motor vehicle driver fatalities, except that the detection of alcohol and other substances was less frequent (Fig 5). By history, all those who died while swimming knew how to swim.

Traumatic suicides constituted 16% of the series. Half of the 38 fatalities, however, occurred in 1981 alone (Fig 7). Death resulted from a gunshot wound in 31 instances, hanging in five, and drowning in two. In 13 (34%), the suicidal act was impulsive and situational, occurring during the course of an altercation and involving a handgun in each instance. Two deaths resulted from suicidal "Russian roulette." The victims had an

Methaqualone Blood Concentration, mg/L					
Vehicular Deaths					
	Drivers (N=58)	Passengers (N=12)	Pedestrians (N=11)		
Average	6.5	6.1	8.0		
Range	1.4-16.0	3.6-9.5	2.4-20.5		
Nonvehicular Deaths					
	Drowning (N=16)	Other (N=9)			
Average	7.2	4.5			
Range	1.0-14.2	1.6-11.0			
Other Drugs Detected					
	Drivers	Passengers	Pedestrians	Drowning	Other
Alcohol	43	2	4	4	3
Cocaine	11	1	1	2	0
Benzodiazepines	6	1	1	1	2
Opiates	1	0	2	0	1
Barbiturates	2	0	2	0	1
Miscellaneous	2	0	0	2	0

Fig 5.—Toxicological data in vehicular and nonvehicular deaths.

average age of 26 years, and their toxicological findings were similar to those observed in traumatic accident fatalities, with an average blood methaqualone concentration of 6.9 mg/L (range, 0.2 to 20.3 mg/L). Alcohol was present in ten (between 0.01% and 0.12% blood concentration), benzodiazepines in 12, cocaine in six, barbiturates in two, and phenothiazines in one.

The 31 homicide victims averaged 26 years of age (range, 16 to 43 years). Although nine (29%) were shot by police or citizens during the commission of a felony, and one death was ruled a justifiable homicide, no instances of a victim-precipitated homicide¹¹ were encountered. In 12 instances, the homicide was considered nonjustifiable, and in two cases the death resulted more from the irresponsible actions of another than

from malicious intent. Blood concentrations of methaqualone averaged 6.1 mg/L (range, 0.4 to 14.0 mg/L), and alcohol was detected in 16. Cocaine was detected in 18 (58%), benzodiazepines in four, and barbiturates in one.

COMMENT

Methaqualone was first marketed in the United States in 1965 as a safe, nonaddicting, sedative, and hypnotic drug.¹² Within a few years, its abuse potential became evident, and methaqualone was given a Schedule II status.¹³ Presumably this resulted in a relatively restricted supply of the drug and a decrease in methaqualone abuse, as noted here and elsewhere.¹² Recently, reports from the Drug Abuse Warning Network and other sources^{12,13} have indicated a resurgence of the "quiet epidemic." This

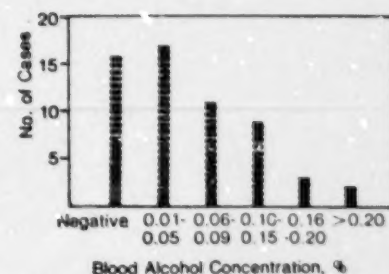


Fig 6.—Blood alcohol concentrations in methaqualone-related vehicular driver fatalities, 1971 through 1981 (N=58). Note that 78% are below presumptive level of alcoholic intoxication.

temporally coincides with the onset of large-scale smuggling operations of counterfeit methaqualone tablets from South America.¹⁴ Also, the street supply of methaqualone has been augmented in recent years by the appearance of sham "stress" clinics that readily provide prescriptions for methaqualone with virtually no legitimate medical indication (*Newsweek*, Sept 28, 1981, p 93).

In this study, a peak of methaqualone-related deaths was found to have occurred in 1973, followed by a decline and then a sharp increase in 1978 that has continued to the present (Fig 1). During the 11 years covered by this study, the population of Dade County increased from 1.3 million in 1971 to 1.7 million in 1981. This increase was steady except for a sharp influx of about 125,000 Caribbean refugees in 1980. Hence, the population growth of this community, although contributing to the incidence of methaqualone detection, would not account for the pattern of methaqualone-related fatalities we have observed. Likewise, the pattern of tourism in south Florida would not account for these observations since tourists form a very small part of our total case load.

Although the method of death investigation in this office has remained unchanged over the years, a more sensitive technique for the analysis of methaqualone was introduced in 1978.⁷ While this procedure would serve to facilitate identification of methaqualone at levels below 2 mg/L, it was mostly used when a gas chromatographic procedure was required for other reasons or when another substance interfered with the usual UV procedure. Improved methods of detection may therefore have contributed to the frequency of identification

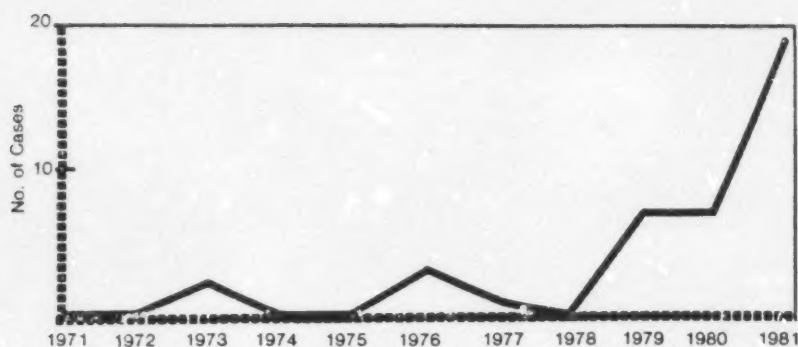


Fig 7.—Incidence of methaqualone-related traumatic suicides, 1971 through 1981 (N=38).

of methaqualone in recent years, but they could not entirely account for the changing pattern of methaqualone-related deaths observed in this series.

Comparison of drug-related fatalities among medical examiner systems is difficult because of the lack of uniformity in the approach to death investigation. Likewise, toxicological testing is influenced by what drug use is prevalent in a community. Thus, between 1972 and 1975, this department performed more assays for methaqualone than did several other urban areas¹⁴ where use of other drugs prevailed. This, however, does not indicate that methaqualone abuse is unique to south Florida. Indeed, reports from the Drug Abuse Warning Network and elsewhere^{12,13,15} indicate that methaqualone abuse is now a nationwide problem.

The typical methaqualone-related death in this series was that of a 25-year-old white man who died of traumatic causes. Blacks, who accounted for 5% of this series, were underrepresented, in that they compose 17% of the overall population of this community. Similar age and ethnic distributions have been reported in studies of nonfatal methaqualone abuse.^{12,15} No attempt was made in this study to delineate the prevalence of methaqualone abuse in cultural subgroups of this area (such as the Haitian or Hispanic populations).

Discussion of any popularly abused drug must consider three factors: (1) the potential for overdose, (2) modification of behavior with respect to functioning in the environment, and (3) the medical consequences of prolonged, long-term use. This study does not address the last category except to state that no anatomic

abnormalities attributable to long-term use of methaqualone were observed (in contrast, for example, to the expected autopsy findings in a chronic alcoholic or heroin addict). The overdose potential from methaqualone abuse, however, was quite evident in 1973. Although such deaths are again increasing, the magnitude seems to be relatively small when compared with the incidence of non-fatal emergency room overdose cases reported¹⁶ and the currently plentiful street supply of methaqualone.¹⁷ A possible explanation for this is that the counterfeit product may or may not contain the expected 300 mg of methaqualone. Also, compared with the situation in the early 1970s, the drug is now relatively expensive for the street buyer. Local police agencies indicate that counterfeit methaqualone currently sells for \$3 to \$5 per tablet. The street buyer of methaqualone may thus be consuming less methaqualone than in the early 1970s, and doing so less frequently because of the expense. Conversely, a plentiful supply of methaqualone coupled with a very low price would potentially result in an increased frequency of methaqualone-related overdose deaths.

Currently, the effect of methaqualone on behavioral modification seems to have a much more substantive impact on society, both economically and medically, than the potential from overdose. In this series of 246 methaqualone-related fatalities, 72% were the result of trauma of one form or another. The effect of methaqualone, alone or in combination with other substances, is most reminiscent of that of acute alcoholic intoxication. Poor judgment, impulsive actions, lack of motor coordination, and an

apparently somnolent state were the most frequently observed effects that rendered most of these trauma victims less capable of coping with a relatively benign environment. This behavior was most clearly evident in the precrash factors of the vehicular driver fatalities of this series.

Toxicological data from these victims (Figs 3 and 5) indicate that methaqualone is often found in combination with other drugs. Street drugs, however, are not governed by the rules of stringent quality control typical of legitimate pharmaceutical firms. Indeed, drugs sold on the street as methaqualone may contain only phenylcyclidine¹⁸ or diazepam (as in one sample we confiscated and tested). In this area, barbiturates and benzodiazepines (particularly diazepam) are the most frequently detected additives found in counterfeit methaqualone tablets. We concur with others¹² that the relatively frequent detection of these substances along with methaqualone may well reflect ingestion of the counterfeit product and not polydrug abuse *per se*. Unfortunately, samples of the actual medication ingested are generally not available for comparison with the toxicological findings to confirm or refute this suspicion. The presence of opiates and cocaine, however, most probably reflects the recreational milieu in which methaqualone was taken. This is especially evident in comparing the pattern of detected drugs in accidental and suicidal overdose victims (Fig 3) as well as in the vehicular accident victims (Fig 5).

The additive effect of methaqualone and other CNS depressant drugs has been reported elsewhere.^{12,13,17,19} Alcohol was frequently detected in the vehicular fatalities, particularly the drivers. The majority of these drivers had blood alcohol concentrations of less than 0.10% and an average blood methaqualone concentration of 6.5 mg/L. These findings are comparable to those in a study of nonfatal intoxicated drivers, in whom a median of 4.1 mg/L of methaqualone was found in the blood when no other substance was detected, and between 3.1 mg/L and 3.6 mg/L when alcohol was present in concentrations below 0.10%.¹² It is thus evident that methaqualone, alone or in combination with alcohol or other drugs, may

result in substantial impairment in operating a motor vehicle. At present, it is not possible to determine how many automobile and pedestrian deaths result from the actions of a surviving person under the influence of methaqualone. Nevertheless, the rapidly increasing incidence of methaqualone-related vehicular deaths (Fig 4) clearly emphasizes the potential danger to the public at large posed by those who use methaqualone as a recreational substance.

The pattern of methaqualone abuse

has changed from a preponderantly overdose phenomenon to a pattern of traumatic death and, by inference, of nonfatal injury. Extrapolation of these data and reports of others^{12,13} underscore the medical and economic impact of the methaqualone abuser as well as the potential for victimization of innocent parties. Appropriate legislation to restrict the distribution of methaqualone and detect its presence in apparently intoxicated motor vehicle drivers seems to be indicated. Such legislation, however, must be

tempered with appropriate expertise and testimony to address the importance of detected drug levels, the question of drug tolerance, etc. These efforts, combined with serious attempts at curbing the importation of counterfeit methaqualone, should reduce the incidence of methaqualone-related deaths. The current trends in methaqualone abuse should also encourage the socially responsible physician to avoid prescribing this medication when reasonable alternatives exist.

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A SERVICE OF UP FRONT, INC.

Your Independent Drug Information Center

Florida Passes Law Banning Methaqualone

By Caroline J. Ciancutti

The Florida legislature has passed, and Governor Bob Graham has signed into law, a bill reclassifying methaqualone as a Schedule I drug in Florida, thus banning its prescription for any indication. The law is to take effect on July 1, 1982.

This action comes as the latest step in an effort to reduce the widespread recreational use of methaqualone. It is specifically aimed at so-called "stress clinics" which readily dispense prescriptions for methaqualone.

In recent years, many indicators have shown that methaqualone use has become one of the primary drug abuse problems in the Miami area.

Methaqualone related deaths in Dade County have risen dramatically over the last decade, with significant rises in 1973 and 1978. Medical examiners in both Dade and Broward counties note that increasing numbers of drivers killed in vehicular crashes have been found to have methaqualone in their bodies in recent years.

Drug abuse treatment facilities have reported a striking increase in clients who name methaqualone as their primary drug problem over the last five years. This client population is younger than the average client in earlier years, supporting other evidence that methaqualone is widely used among teenagers.

Major seizures of bootleg Quaalude tablets and bulk methaqualone have become standard news items in South Florida. It appears that large quantities of bootleg Quaalude

tablets are pressed in Colombia and then smuggled into the United States through the same channels that bring major supplies of marijuana and cocaine into the country.

A recent twist in the marketing of recreational methaqualone is the emergence of so-called "stress clinics." These bill themselves as facilities where people can get help in coping with stress. In fact, these "stress clinics" are little more than

Quaalude and Valium dispensaries.

A typical appointment runs like this: The client fills out a form about lifestyle and medical history and spends five minutes or so answering a counselor's questions about his situation. A simple assertion that the individual is having trouble coping with stress meets the clinic's criteria for the prescription of medication. A physician performs a per-

WHAT'S IN A NAME?

Bootleg Quaalude Ingredients

By Jo Warren

While it may be true that "aroseisaroseisarose," it is not true that "aludeisaludeisalude."

Analysis results from Up Front's S.P. Lab. and PharmChem Laboratories' Analysis Anonymous service show that only about half of the alleged Quaaludes submitted for analysis actually contain methaqualone, the generic drug Quaaludes are supposed to contain.

If buyers are not getting methaqualone, what are they getting? Diazepam (Valium) and phenobarbital lead the list of methaqualone substitutes in samples tested recently at S.P. Lab and a wide range of drugs have shown up in samples submitted for testing to PharmChem Laboratories.

During December, January and February, 13 alleged Quaalude samples were submitted to S.P. Lab. Of these, six were methaqualone and seven were other drugs. In addition to diazepam and phenobarbital, the non-methaqualone samples contained diphenhydramine (Benadryl) and doxylamine.

Doxylamine turned up in four of the 25 samples tested in December and January at PharmChem. Sixteen of the 25 samples contained methaqualone or a combination of methaqualone and other substances. Drugs and other substances contained in the nine non-methaqualone samples included diphenhydramine, acetaminophen, pheniramine, salicylamide, ketamine, ephedrine, mannitol and lactose. One alleged Quaalude actually contained acetaminophen, doxylamine, ephedrine, lactose, pheniramine and salicylamide, but no methaqualone.

According to an article in the January/February, 1982, issue of *Drug Survival News*, the validity rate for methaqualone samples tested in 1981 at six laboratories was only 52%.

(Continued on page 2)

functory physical exam and then pulls out the prescription pad. Typically, fifteen minutes after being handed the questionnaire, an individual emerges from the clinic with a prescription for forty five 300 mg. Quaaludes. Less often, the prescription is for Valium.

The visit costs \$75 or \$100. Ever, when this amount is added to the cost of purchasing the Quaaludes, the individual can turn a decent profit by selling the tablets at \$5-7 apiece, the going

rate for pharmaceutical Quaaludes.

It is expected that "stress clinic" owners will fight Florida's new law in the courts. It is also likely that they will turn to other depressants if the ban on methaqualone holds.

Some argue that closing the "stress clinics" will create an increased incidence of problems as people who are now obtaining pharmaceutical Quaaludes will resort again to the illicit market. Besides fluctuating dosages in

those bootleg Quaaludes that do contain methaqualone, there are substitutions, sometimes dangerous ones, to contend with (see box, p. 1).

But others disagree with this position. Charles V. Wetli of the Dade County Medical Examiner's office does not believe laws should make it easier for people to obtain methaqualone for recreational use. People do not just stay home and out of the way when they take Quaaludes, he points out. He recently surveyed all the methaqualone related deaths in Dade County. These have increased sharply since 1978 and in 80% of the methaqualone related deaths since 1978, the actual cause of death has been trauma such as a car accident or drowning.

Currently, the technology does not exist to test drivers for the presence of methaqualone in their blood at the roadside. Nor do laws exist specifically prohibiting driving under the influence of methaqualone. Wetli believes legislation should be passed allowing officers to take an individual who fails a coordination test but does not show an illegal blood alcohol level to be taken to the nearest hospital. There, he would be required to submit to a blood test for the presence of methaqualone and the results would be legal evidence.

Even if one favors giving people access to methaqualone of assured quality and known dosage, it cannot be denied that "stress clinics" that do nothing about stress and exist to prescribe methaqualone are another expression of the hypocrisy that pervades this country's attitudes and policies regarding drugs.

What's In A Name (Continued from page 1)

If not methaqualone . . .

methaqualone — sleep inducer
acetaminophen — mild analgesic; fever reducer
diazepam — anti-anxiety agent
diphenhydramine — antihistamine; sleep inducer
doxylamine — antihistamine; sleep inducer
ephedrine — decongestant; mild stimulant
ketamine — dissociative anesthetic
lactose — milk sugar
mannitol — mild laxative
pheniramine — antihistamine
phenobarbital — sedative; anti-convulsant
salicylamide — aspirin-like compound

While diazepam is a relatively common bootleg Quaalude ingredient, it occasionally appears in doses high enough to cause serious problems. The phenobarbital containing Quaaludes tested at S.P. Lab have generally contained dangerously high doses.

A large dose diazepam-containing Quaalude may leave the user with memory loss for the period of intoxication; nausea; vomiting and stomach cramps as soon as 15 minutes after taking the pill; extreme fatigue; need to sleep for a long time; lethargy and slight disorientation for periods lasting up to several days; and agitated and delusional behavior, including suicidal ideation.

High doses of phenobarbital can cause a user to feel very lethargic for up to four days with an inability to think clearly and a lack of coordination. Some people have reported an almost complete inability to talk or walk or think. Because phenobarbital is slower acting than methaqualone, users may be fooled by the slow onset of effects and take more than one tablet in a short period of time, increasing the potential for overdose and longer duration of adverse effects.

Convulsions have been reported after cessation of extended use of methaqualone, phenobarbital and diazepam, although they appear to be less frequent with the latter. A check of two South Florida drug abuse treatment centers turned up reports of convulsions among several clients who indicated they had had problems with Quaaludes.

Both centers reported that 40 percent of their clients, admitted during the past few months, indicated problems with Quaalude abuse. Quaaludes were reported as the primary drug of abuse by 14 percent of the recently admitted clients at one center and by 21 percent at the other; secondary use was reported by 12 percent and 13 percent; and tertiary use by 18 percent and 7 percent of the clients.

A counselor at one center said that Quaalude abuse has risen in terms of total admissions in recent months when compared to previous years.



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Examination of law enforcement dilemma posed by widespread and profitable operation of "stress clinics" providing high volume prescriptions for Quaalude in treatment of anxiety and insomnia.

2. Cohen, Sidney, M.D.; "Methaqualone: A New Twist"; *Drug Abuse and Alcoholism Newsletter*; 11(1); January 1982.

Report on rise of "stress clinics" dispensing Quaalude in treatment of insomnia and anxiety, including profitability, patronage, and law enforcement problems. Author notes clinics "treat stress almost exclusively by prescribing 30 to 60 300mg Quaalude tablets at a time," and that many such clinics "exist solely as a quasi-legal operation for distribution of Quaaludes to those that want them."

3. Coleman, John B., Pharm.D., and Joseph A. Barone; "Abuse Potential of Methaqualone-Diphenhydramine Combination"; *American Journal of Hospital Pharmacy*; 38; Feb. 1981; p. 160.

Letter describing emergency episode involving overdose of methaqualone-diphenhydramine, a combination available by prescription in Europe and Canada (Mandrax®). Authors note that diphenhydramine (a sedating-antihistamine) may enhance the effects and toxicity of methaqualone and should be screened for in apparent methaqualone overdose where blood levels of the sedative appear within the therapeutic range.

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DAWN statistics on methaqualone-related emergency medical incidents in 1981. Charts show percent distribution of drug mentions by demographic and drug use characteristics according to metropolitan area. Methaqualone was the fifth most frequently mentioned drug in emergency rooms in 1981.

5. Gerald, Michael C., Ph.D., and Patricia M. Schwirian, Ph.D.; "Nonmedical Use of Methaqualone"; *Archives of General Psychiatry*; 28(5); May, 1973; p. 627-631.

Survey of 66 weekly methaqualone users, with 33% developing varying degrees of dependence within the two month study period. Authors compare study with foreign literature on methaqualone-related deaths and overdoses, arguing that the drug should be re-evaluated for its efficacy in treatment of insomnia and anxiety in light of its abuse potential and complications associated with overdose and withdrawal. 26 references.

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Due to risk of seizures and other life-threatening complications, hospitalization and medical supervision during methaqualone and other sedative withdrawal is the accepted practice. Authors outline an out-patient detoxification management program using phenobarbital with few incidents of serious medical complications. 19 references.

7. Inaba, Darryl S., Pharm.D., George R. Gay, M.D., John A. Newmeyer, Ph.D., and Craig Whitehead, M.D.; "Methaqualone Abuse: 'Luding Out'"; *Journal of the American Medical Association*; 224(11); June 11, 1973; p. 1505-1509.

Traces widespread publicity for and prescription of methaqualone as a non-addicting alternative to barbiturates and subsequent sharp rise in tolerance, dependence, and overdose reports in U.S. Includes three case histories of methaqualone overdose or addiction. Authors note recent increase in both street and prescription use (360% increase in sales in 1972), and conclude that while use does not yet rival that of barbiturates, potential abuse is high due to drugs' non-addicting status, decreased availability of barbiturates, and media sensationalization.

8. Mitcheson, Martin, James Davidson, David Hawks, Laura Hitchins, and Sarah Malone; "Sedative Abuse by Heroin Addicts"; *Journal of Psychedelic Drugs* (now *Journal of Psychoactive Drugs*); 4(2); Winter 1971; p. 123-131.

Survey of 65 heroin addicts who used sedatives, particularly methaqualone and barbiturate, while under treatment at British clinics. Subjects claimed to use sedatives for three reasons: psychoactive effects, insomnia, and to ease or avoid withdrawal symptoms. Subjects preferred barbiturate (water soluble) over methaqualone (relatively insoluble), yet admitted they would use whatever was available. Authors note sedative use appeared more dysfunctional, in terms of ability to think or work, than heroin, and argue that increased controls over any one group of drugs is likely to result in increased use of another group of drugs. 21 references.

9. National Narcotics Intelligence Consumers Committee; "Dangerous Drugs"; in *The Supply of Drugs to the U.S. Illicit Market from Foreign and Domestic Sources in 1980 (With Projections Through 1984)*; Washington, D.C.: Drug Enforcement Administration, 1982.

DEA intelligence estimates of prevalence, source, and trafficking patterns of methaqualone in 1980. Diversion from legitimate U.S. medical sources accounted for 10% of illicitly available supplies, while 85% was estimated to have been bootleg, or counterfeit methaqualone preparations, smuggled into the U.S. from illegal pill-tableting operations in Colombia and Mexico.

10. Ostrenga, James A., Ph.D.; "Methaqualone: A Dr. Jekyll and Mr. Hyde?"; *Clinical Toxicology*; 6(4); 1973; p. 607-610.

Review of street availability patterns and physical and psychoactive effects. Describes rising popularity of drug since 1970 and urges reclassification as a Schedule II controlled substance, arguing that methaqualone is "as dangerous and addicting as barbiturates."

11. Pascarelli, Emil F., M.D.; "Methaqualone Abuse: The Quiet Epidemic"; *Journal of the American Medical Association*; 224(11); June 11, 1973; p. 1512-1514.

Review of rapid spread of methaqualone as a purported aphrodisiac and street drug of choice in the U.S. during the late-1960s and early-1970s. Traces early, foreign reports of acute and long-term dangers (Japan in the 1950s, Great Britain, Australia, and Germany in the mid-1960s) and urges U.S. physicians and law-makers to learn from the experience of other countries.

12. Pawlak, Victor; "Bootleg Quaaludes: Imitations Causing Headaches for Police, Users, Legitimate Makers"; *Focus on Alcohol and Drug Issues*; 4(2); March-April, 1981; p. 17.

Examination of the booming national "boot lude" market, including use trends, street price, and domestic and foreign sources. Author notes the illicitly manufactured Quaalude (containing anything from Valium® to phenobarbital) and lookalike Quaalude (containing legal, non-prescription decongestants and sedatives) account for the majority of street methaqualone available in the U.S. today.

13. Perry, Charles; "Unconsciousness Expansion: The Sopor Story"; *Rolling Stone*; 131; March 29, 1973.

Rise of early-1970s "Quaalude Culture," including fly-by-night "dry speakies" where the drug is sold and used, and commercial products catering to users. Author contrasts reports of dangers with widespread public beliefs and manufacturers' promotion as a non-addicting depressant.

14. "Quaalude Now Rivals Heroin, Coke for ODs"; *The Journal*; October 1, 1981; p. 3.

U.S. Drug Enforcement Administration report citing three-year rise in hospital emergency room incidents and drug trafficking seizures involving Quaalude. Report notes sudden increase in use, particularly among teenagers, with greatest use centered in states nearest U.S. smuggling entry points, including Florida and Texas.

15. Schnoll, Sidney H., M.D., and Ralph Fishkin, D.O.; "Withdrawal Syndrome with Methaqualone"; *Journal of Psychedelic Drugs* (now *Journal of Psychoactive Drugs*); 5(1); Fall 1972; p. 79-80; rpt. in *Grassroots*; May 1973 suppl.; p. 1-2.

Description of withdrawal syndrome in four users of illegally-obtained methaqualone. Authors suggest syndrome may indicate possible addiction liability, and caution against diversion of prescription supplies to the street market.

16. Smith, David E., M.D. and Donald R. Wesson, M.D.; "Methaqualone"; in *Diagnosis and Treatment of Adverse Reactions to Sedative-Hypnotics*; DHEW Publication No. (ADM) 74-24; Rockville, Md.: National Institute on Drug Abuse, 1974; p. 53-54.

Brief review of symptoms and management of methaqualone overdose. Recommend immediate stomach pump with fluid containing activated charcoal and respiratory assistance, with particular care in keeping airways open and clear.